



IEPR Ad Hoc Committee Hearing on:

Transportation Fuels, Technologies, and Infrastructure Assessment Report

August 21, 2003

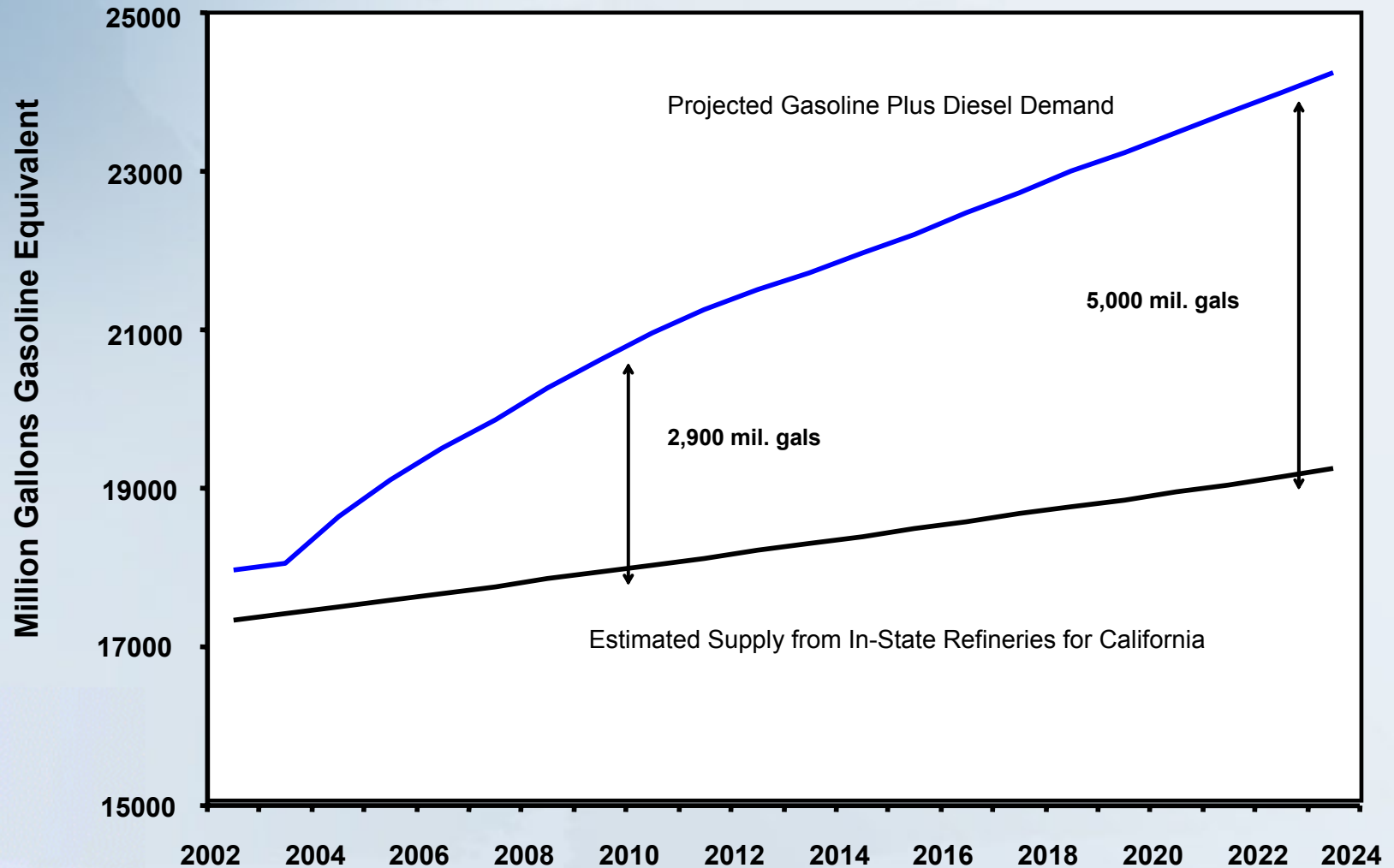
SB 1389 Legislative Direction

- Identify emerging energy trends and potential adverse impacts.
- Assess and recommend administrative and legislative actions.

OVERVIEW

- **SUPPLY AND DEMAND TRENDS**
- **FUEL PRICE VOLATILITY**
- **INSUFFICIENT FUEL SUPPLY**
- **REDUCING PETROLEUM
DEPENDENCE**

Supply and Demand Trend



Fuel Price Volatility

California susceptible to price spikes

- California production at near capacity
- Low inventories
- Unexpected supply disruption

Fuel Price Volatility

AB 2076 Strategic Fuel Reserve study
addressed price volatility

Focus on fuel supply that is:

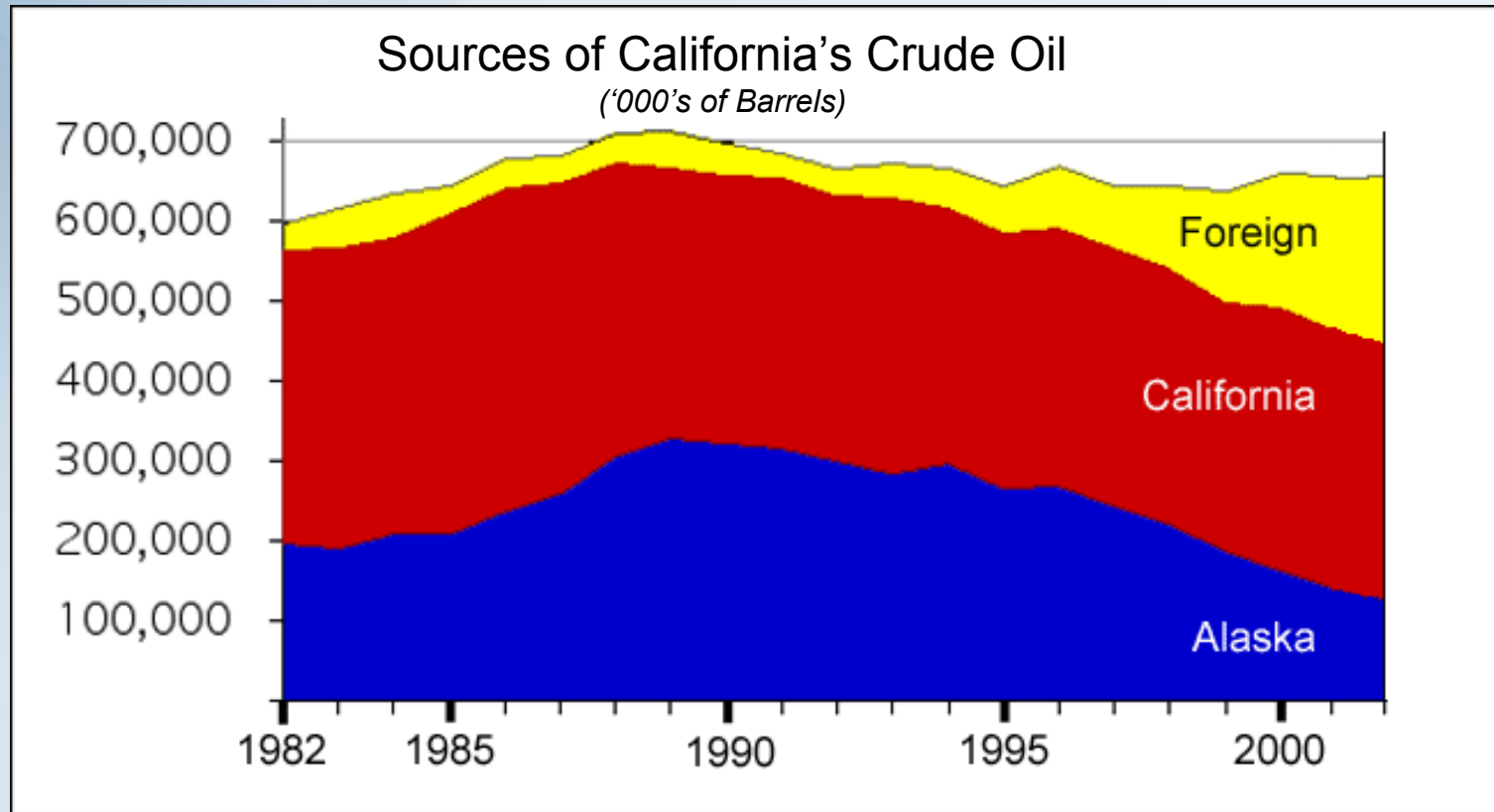
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Fuel Price Volatility

RECOMMENDATIONS:

- The Energy Commission will undertake a comprehensive evaluation of California's infrastructure needed to handle future petroleum product imports, in consultation with the following agencies – State Lands Commission, Ports of Los Angeles and Long Beach, Coastal Commission, and San Francisco Bay Conservation and Development Commission.
- The Governor and Legislature should identify a state licensing authority for petroleum infrastructure facilities.

Insufficient Fuel Supply



California Production – 2002

317,841,000

Alaskan Crude Oil – 2002

143,463,000

Foreign Crude Oil – 2002

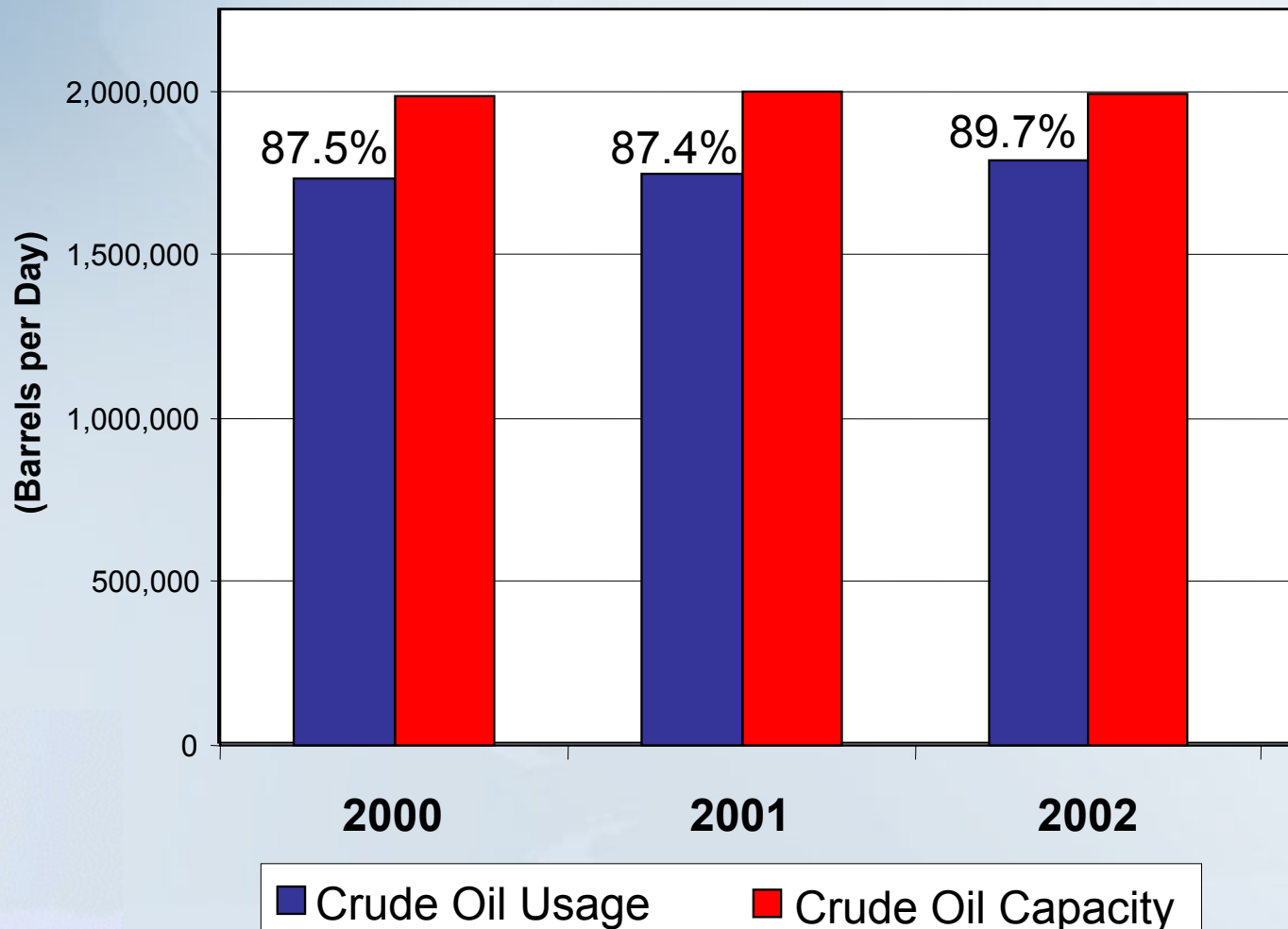
200,673,000

Total

661,977,000 (Barrels)

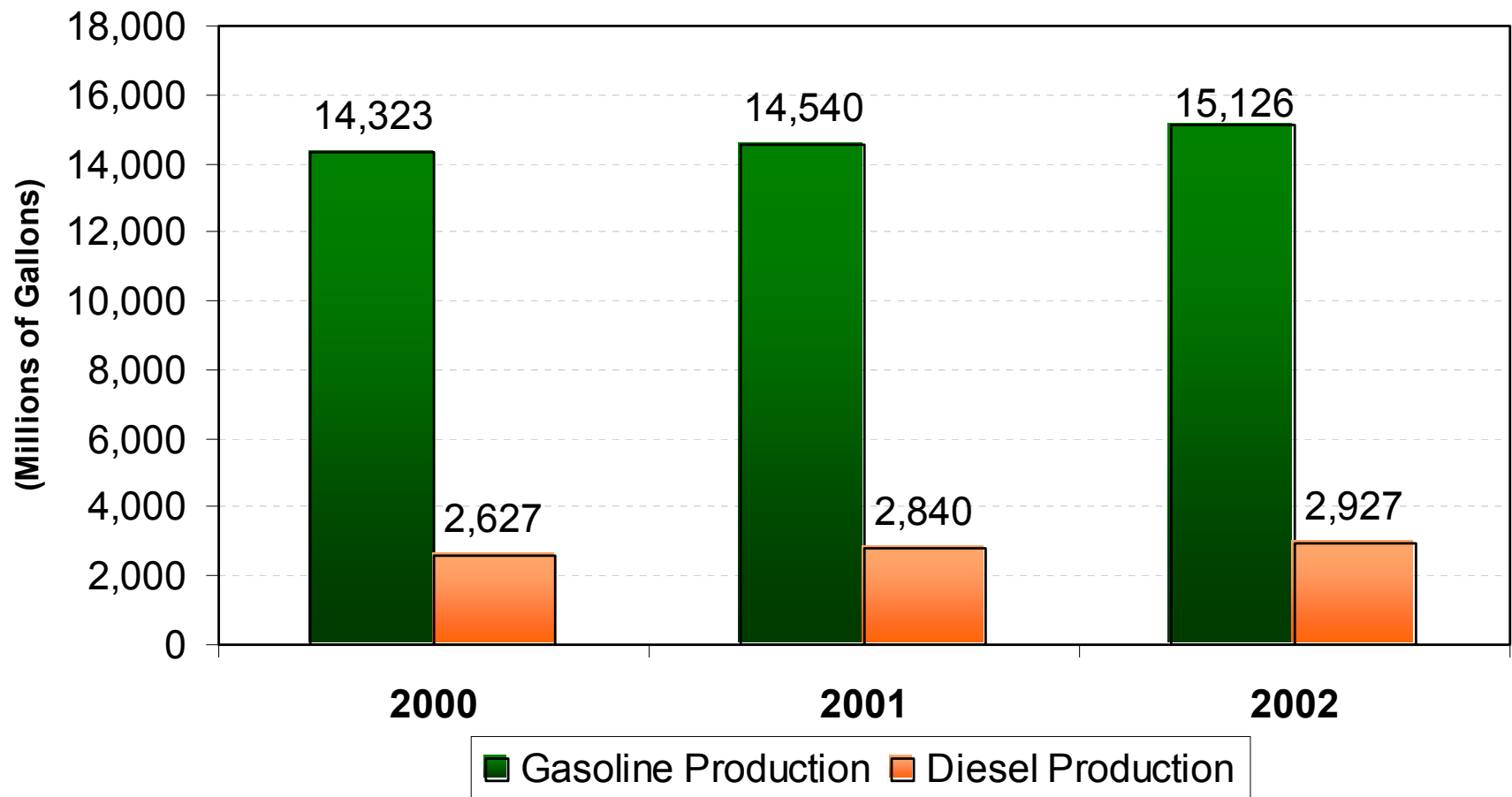
Insufficient Fuel Supply

California Crude Oil Utilization



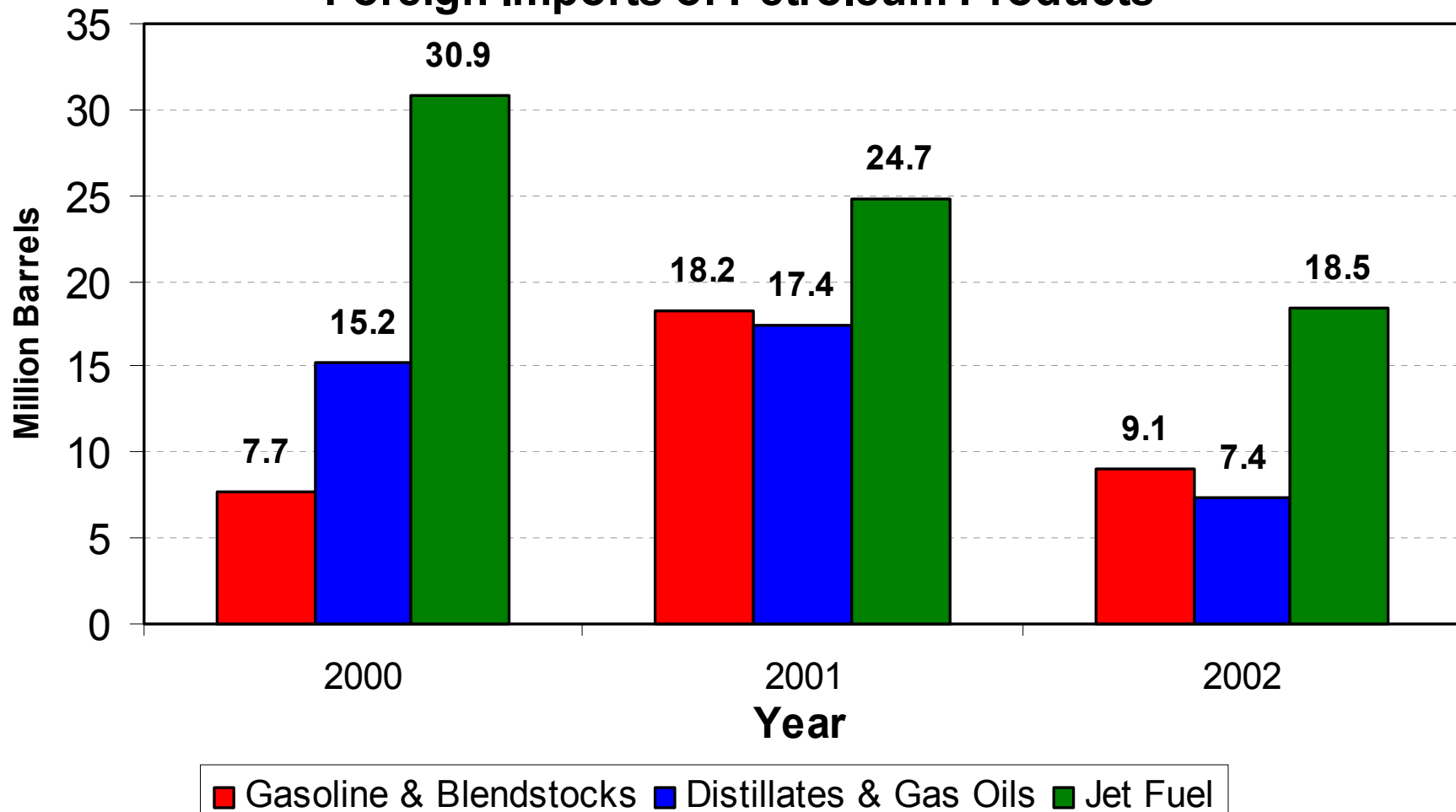
Insufficient Fuel Supply

California Gasoline and Diesel Production
(CaRFG and CARB Diesel Only)



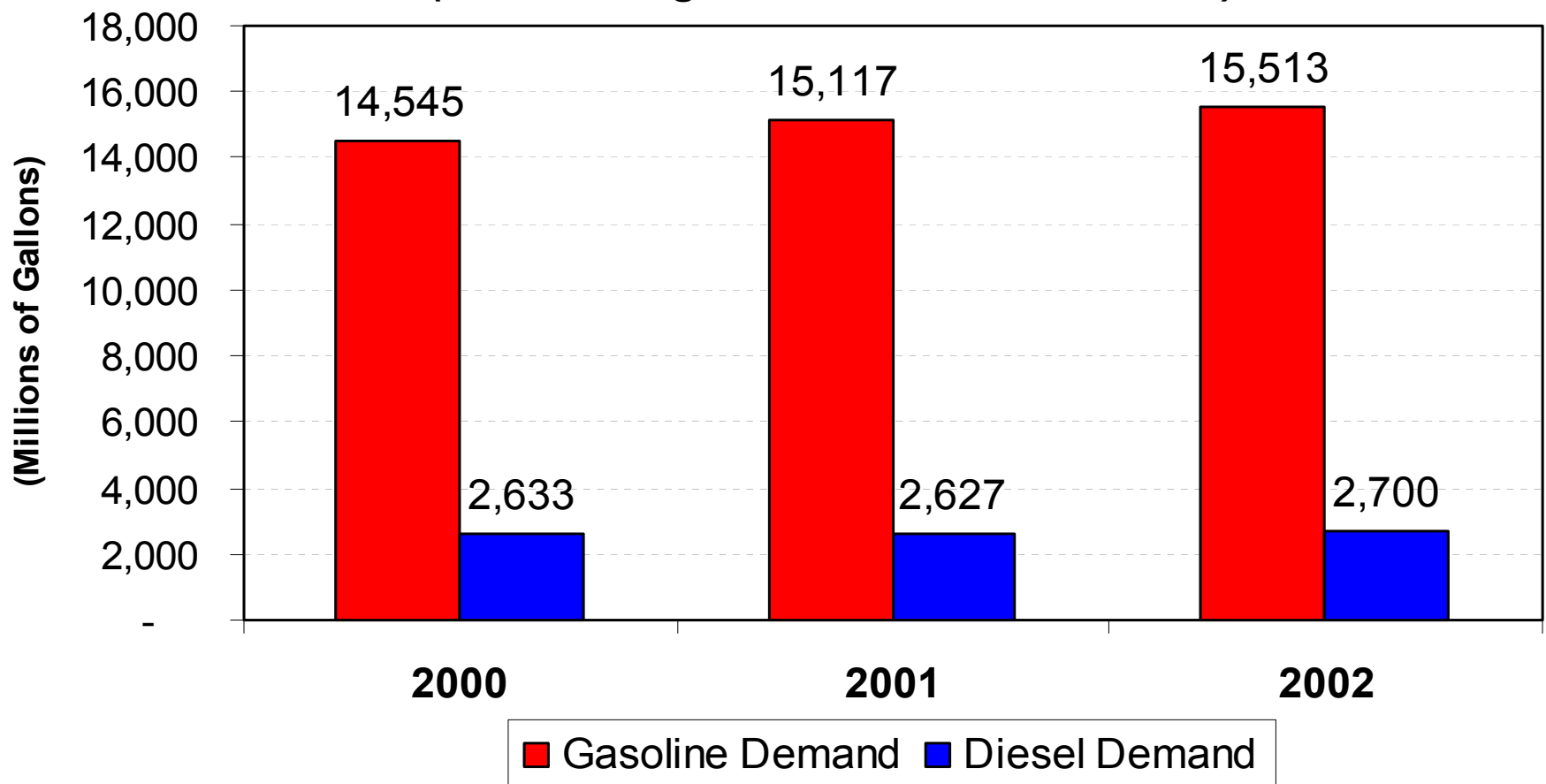
Insufficient Fuel Supply

Foreign Imports of Petroleum Products



Insufficient Fuel Supply

California Gasoline and Diesel Demand
(Gasoline Figures include Aviation Fuel)



Insufficient Fuel Supply

OTHER FACTORS AFFECTING SUPPLY:

- FEDERAL OXYGENATE STANDARD
- FEDERAL RENEWABLE FUEL STANDARD
- LOW SULFUR DIESEL FUEL STANDARD

Insufficient Fuel Supply

RECOMMENDATIONS:

- The Energy Commission should work with the transportation fuel industry to collect information on future expansion and construction plans for in-state refining capacity, importation of crude oil, blend stocks and finished products to assess future supply adequacy as well as constraints to expansion and construction that might adversely impact the delivery of future transportation fuel supplies.

Insufficient Fuel Supply

RECOMMENDATIONS:

- California should continue to pursue a California waiver from U.S. EPA's oxygenate requirements.
- The Energy Commission should continue to monitor the enactment and implementation of the pending federal Energy Policy Act legislation and its impact on California's transportation fuel price and supply.
- The Energy Commission should continue to monitor the progress of refineries to meet the CARB low sulfur diesel fuel regulation, as well as the progress of other states' implementation efforts.

Reducing Petroleum Dependence

Why does California need to reduce petroleum dependence in the transportation sector?

- Growing dependence on foreign oil
- Economic costs
- Environmental impacts

Reducing Petroleum Dependence

AB 2076 Petroleum Dependence Reduction study addressed transition to sustainable energy future

Focus was on:

- Efficiency improvements
- Fuel substitution options (non-petroleum fuels use)

Reducing Petroleum Dependence

Goal:

Based on analysis and public input, CEC adopted reduction goal for gasoline and diesel demand:

- Reduce Demand to 15% below 2003 levels by 2020 and maintain beyond 2020.

Reducing Petroleum Dependence

Cost-benefit evaluation methodology:

- Estimated net benefits*
- Assumed 100% market penetration for fuel efficiency options only
- Assumed advancements in technologies
- Not intended to be forecast

**Impacts on consumers, the environment and energy security*

Reducing Petroleum Dependence

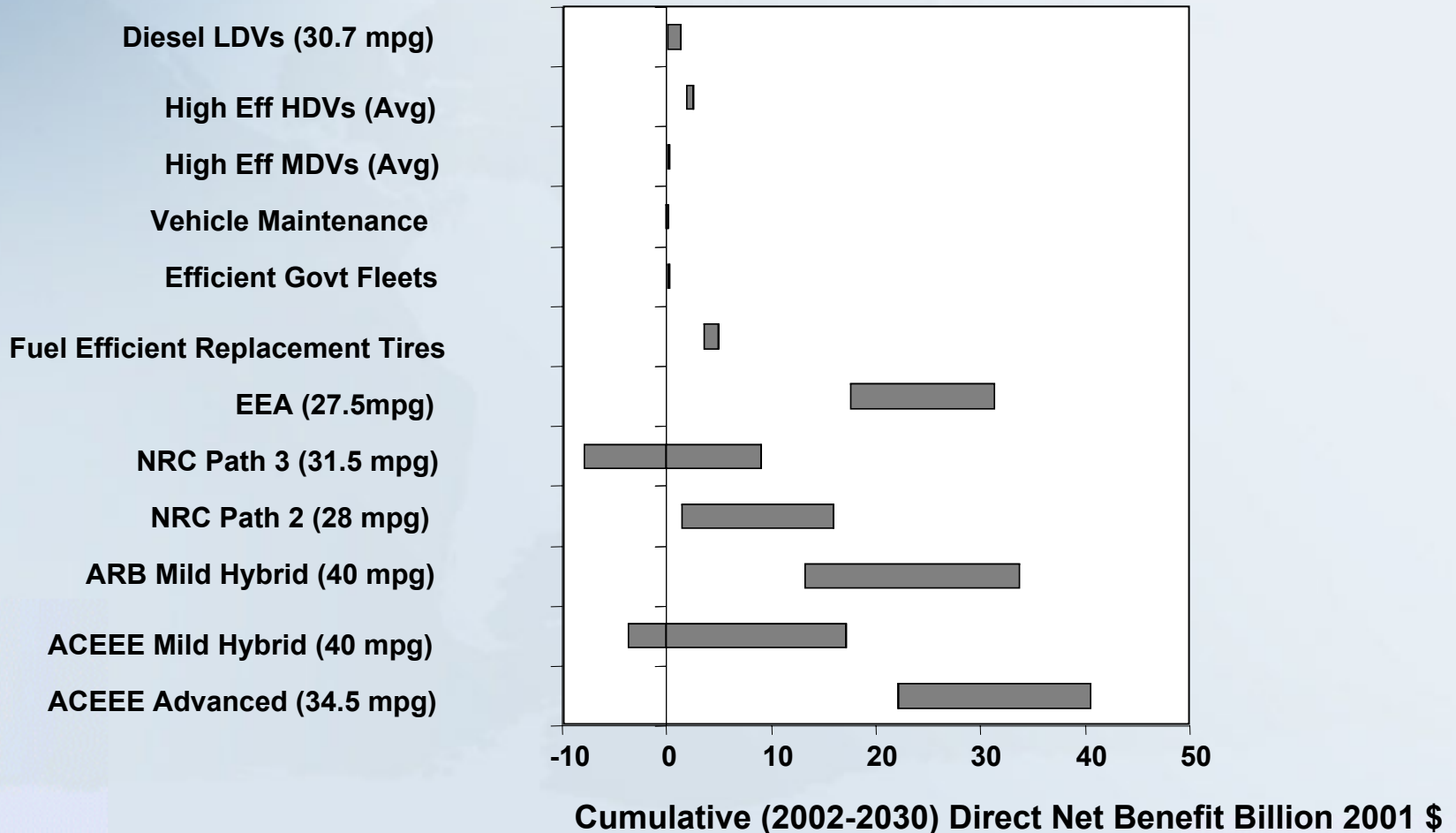
Cost-benefit evaluation methodology:

- Best case scenario to achieve maximum and sustainable petroleum fuel reductions with net benefits
- Identify efficiency and non-petroleum fuel options with a positive net societal benefit
- Using options with positive merit, build a portfolio with the largest and sustainable reductions

Reducing Petroleum Dependence

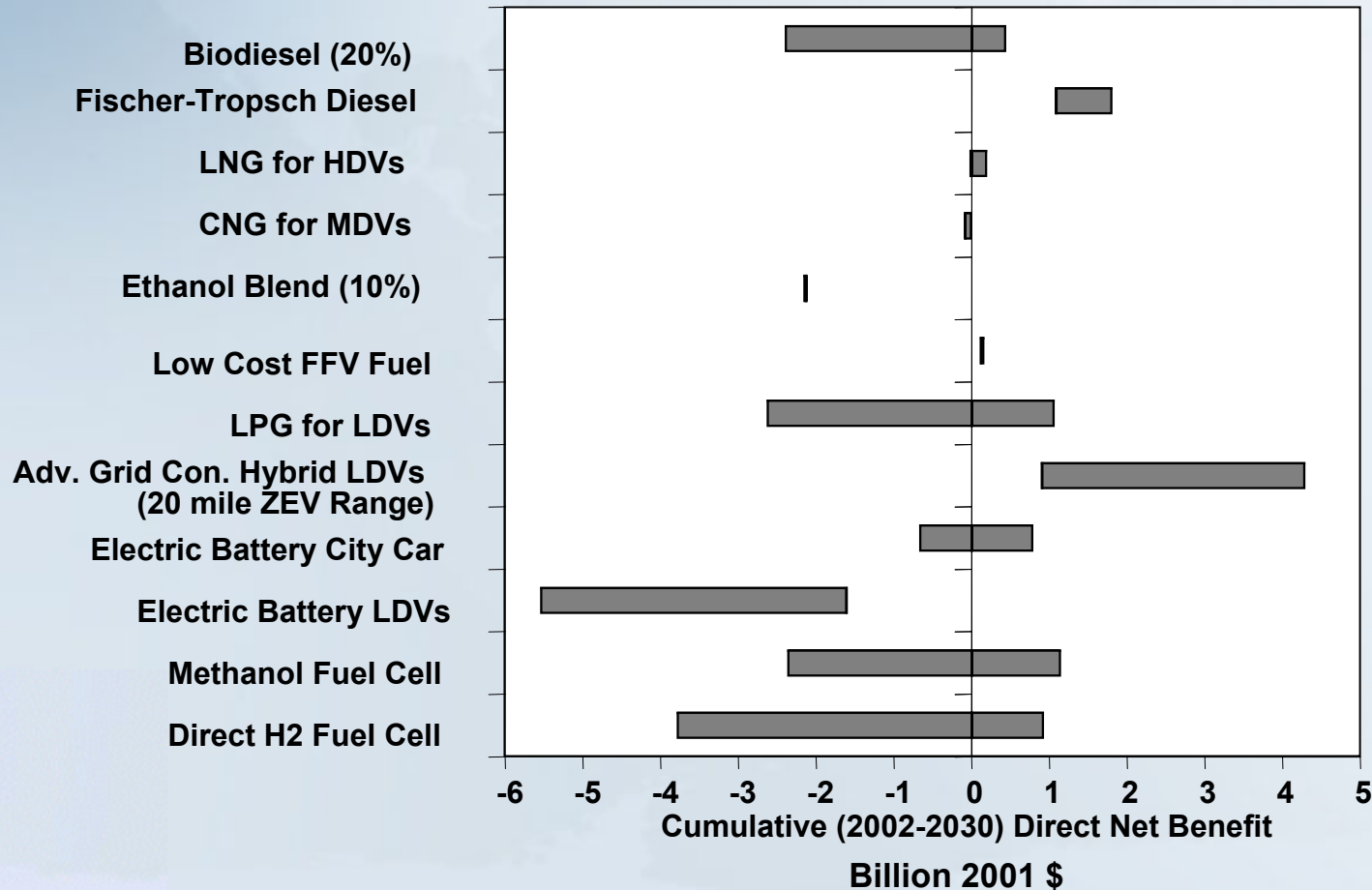
Direct Net Benefit of
Selected Fuel Efficiency Options and Scenarios

Efficiency Options

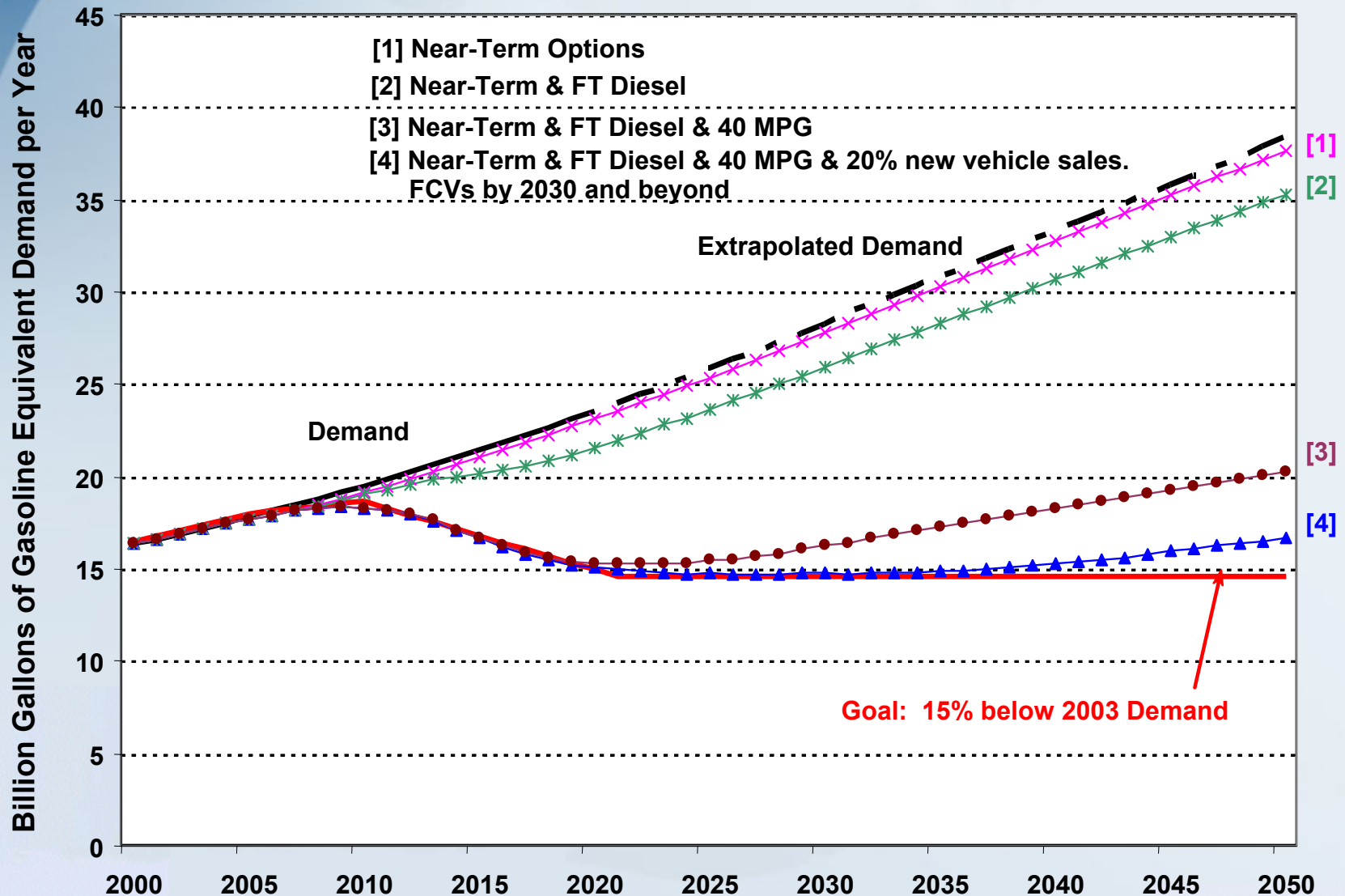


Reducing Petroleum Dependence

**Direct Net Benefit of
Selected Fuel Substitution Options**



Reducing Petroleum Dependence



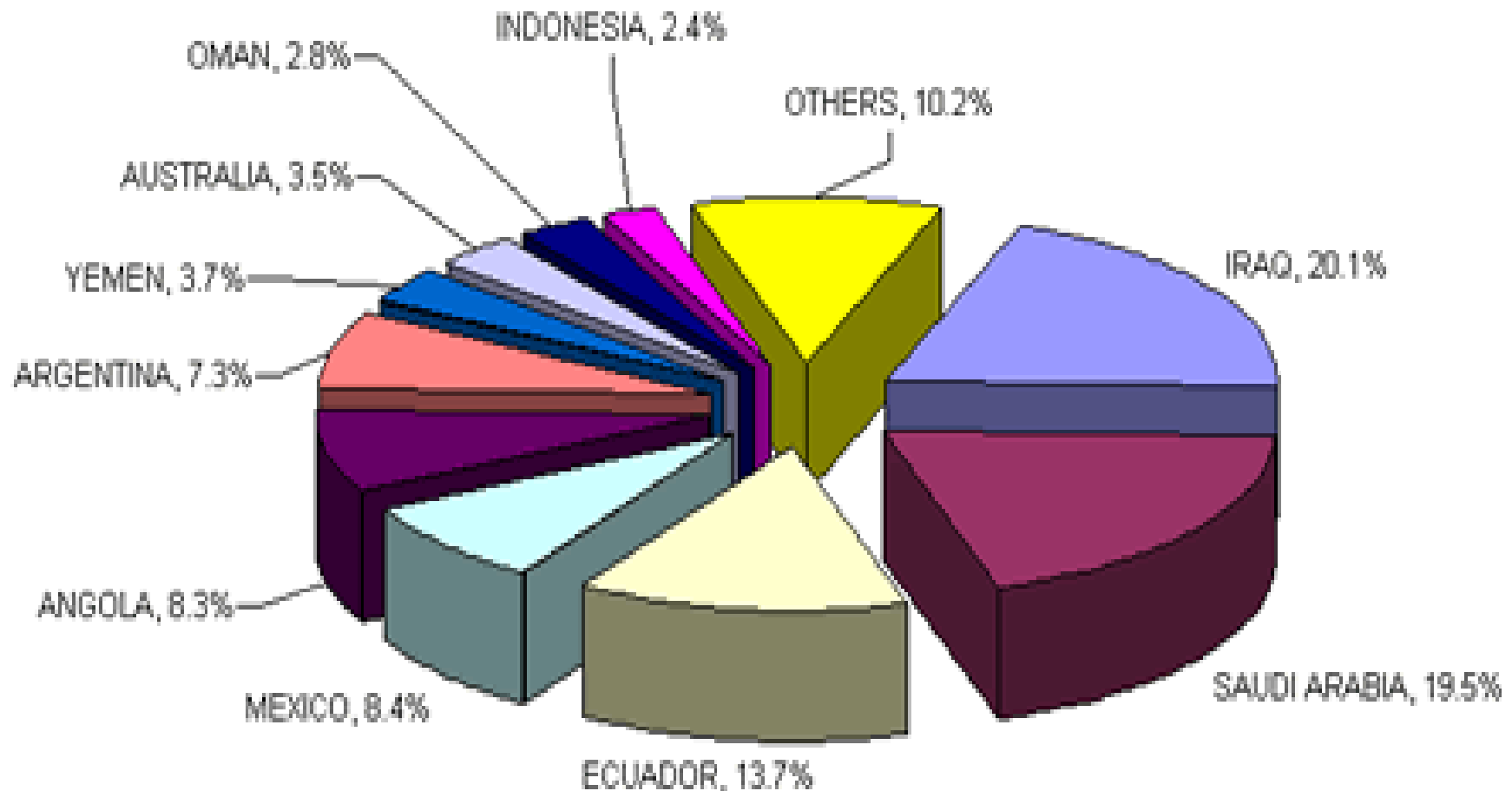
Reducing Petroleum Dependence

Other Activities:

- Analysis and RD&D
- World oil

Reducing Petroleum Dependence

Foreign Sources of Crude Oil Imports to California 2002



Total Foreign Sources: 205,106,621 barrels in 2002

Reducing Petroleum Dependence

RECOMMENDATIONS:

- The Governor and Legislature should adopt the recommended statewide goal of reducing demand for on-road gasoline and diesel to 15 percent below the 2003 demand level by 2020 and maintain that level for the foreseeable future.
- The Governor and Legislature should work with the California delegation and other states to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs).

Reducing Petroleum Dependence

RECOMMENDATIONS:

- The Governor and Legislature should establish a goal to increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030
- The Energy Commission should establish a working group of industry, environmental, and academic stakeholders to develop specific strategies to support research, development, and demonstration consistent with the recommendations adopted under AB 2076 (Chapter 936, Statutes of 2000; Shelley).

Reducing Petroleum Dependence

RECOMMENDATIONS:

- The Energy Commission should continue to analyze the strategies identified in the AB 2076 report to improve its understanding of the costs and effectiveness of new vehicle technologies, the value to the state of reduced environmental damages, the impact of higher fuel efficiency on vehicle safety, consumer choices, and driving patterns.
- The Energy Commission staff should expand its analytical capability to evaluate the costs and benefits of fuel demand reduction options and deployment schemes, including: land use planning concepts, public transportation, and voluntary accelerated vehicle retirement

Reducing Petroleum Dependence

RECOMMENDATIONS:

- The Energy Commission, through public/private partnership collaboration, should pursue basic transportation energy research, hardware development, and infrastructure deployment.
- The Energy Commission should monitor world oil supply market to provide as much advance planning opportunity to respond to significant changes in the world oil production. Monitoring areas include: production profiles, especially for countries that may be nearing their production peaks, reserves to production ratios, industry and related financial markets, global oil substitution and demand reducing trends, and OPEC market share trends.